



Building a Healthy Culture

Practical Strategies

Health and Obesity

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1. Who We Are
2. Strategies Health and Culture Strategies
3. LightenUP Project – studying environmental interventions

A leader in science and technology with a passion for improving human life



- The Dow Chemical Company
- Diversified chemical company
- 60,000 employees worldwide (~50% in US)
- 74% male
- 60% ages 40-60
- Operations in over 50 countries with sales serving more than 175 countries

Make Health a Business Asset

- Big and important
- Critical to organizational strategy
- Leadership by example
- Strategic plan
- Best practice interventions
- Measured performance
- Continuous improvement





- Total economic impact related to employee and retiree health likely exceeds \$750 million/year for Dow.
- Keeping U.S. health care benefit costs in the lower end of the trend estimates could save Dow as much as \$0.07/share in 2008.
- Many health care experts have estimated that a third of current benefits expenditures may be spent on unnecessary or inefficient care.
- Most experts agree that 30 – 50% of health care conditions and illness could be modified by preventive health interventions.
- Significant legislative and regulatory actions are developing and pending which will impact health care, particularly in the U.S.

Big and Important



Drive Financial Discipline and Low Cost to Serve

- Improve the total economic impact related to health of Dow people; direct and indirect costs



Set the Standard for Sustainability

- 2015 Local Protection of Human Health and the Environment
- Set the standard for EH&S; including Health programs



Build a People-Centric Performance Culture

- Health and human performance focus
- My Experience@Dow (Total Rewards): health related benefits, health education, counseling, medical consult, etc.



Invest for Strategic Growth

- Positive brand impact from health focus
- Leadership in health

Critical to Strategy

Health is essential to our sustainability

At Dow, protecting people and the environment is part of everything we do and every decision we make. It is our goal to eliminate all injuries in our workforce and to prevent adverse environmental and health impacts.

Health is a strategic priority for Dow. This means paying attention to the health aspects of all our activities:

- **Employee health**
- Public health
- The health impact of our products
- **How we can develop products that offer health benefits – health and nutrition**



Critical to Strategy

Health is Important to Dow



- The health of Dow people is vital to our performance.
- We are concerned about the affordability of increasing healthcare costs and are focused on good health outcomes and management of direct and indirect costs.
- We are committed to a strategic approach to building a culture of health with prevention as a major pillar in our overall plan.
- Our senior management is committed to health promotion as an important investment in our human capital.
- Our health and productivity strategies are aligned with our business goals.
- We educate our employees about the true cost and total value of personal health.
- We have identified the leading physical and mental health conditions among our employees and know their related direct and indirect costs.
- Our health benefits support prevention, risk reduction, and disease management, and are free of barriers to evidence-based interventions.
- Our incentives support consumer accountability and motivate employees to stay healthy, reduce high-risk behaviors/clinical measures, and/or adhere to disease management regimens.
- We strive to contribute positively to the communities where we operate.

Leadership By Example

The Dow Health Strategy



Vision

We optimize health, human performance and long-term value for Dow by offering an array of health programs and services for employees, retirees and dependents as part of being an employer of choice.



Strategic Plan

Leadership Support Requests



1. Leaders are Visible, Active and Lend Support.
2. Leaders Support Health as a Business Priority, Health Based Services and Metrics.
3. Leaders Foster a Supportive Work Environment.

Workgroup Integration



- Identify a workgroup focal point or champion to ensure consistent communication.
- Ensure EH&S meeting moments include "Health Moments, " support 10-15 minute targeted health education.
- Celebrate individuals and teams for lifestyle changes and helping others.
- Participate in health programs and events as a workgroup.
- Ensure that healthy choices and portion sizes and water are available whenever food/drinks are provided.
- Encourage mini-breaks for physical activity health snacks, fatigue relief and renewal.
- Ensure flexible and innovative solutions for managing work and personal life.
- **Reach 100% plant/dept participation in Health Assessment.**
- Support tobacco policies with no special arrangements for tobacco use.
- Refer to or notify health services when employees have personal or work related injury/illness absences (see your Regional Health Director for appropriate time parameters).
- Ensure that employees return to work through Health Services when employees have personal or work related injury/illness absences (see your Regional Health Director for appropriate time parameters) .
- Support of ergonomic standard: recommended hazard identification, risk controls, refer employees with symptoms to Health Services.

Source: Dow Health Technology Contact / Subject Matter Experts, 2009.

Approach at Multiple Levels

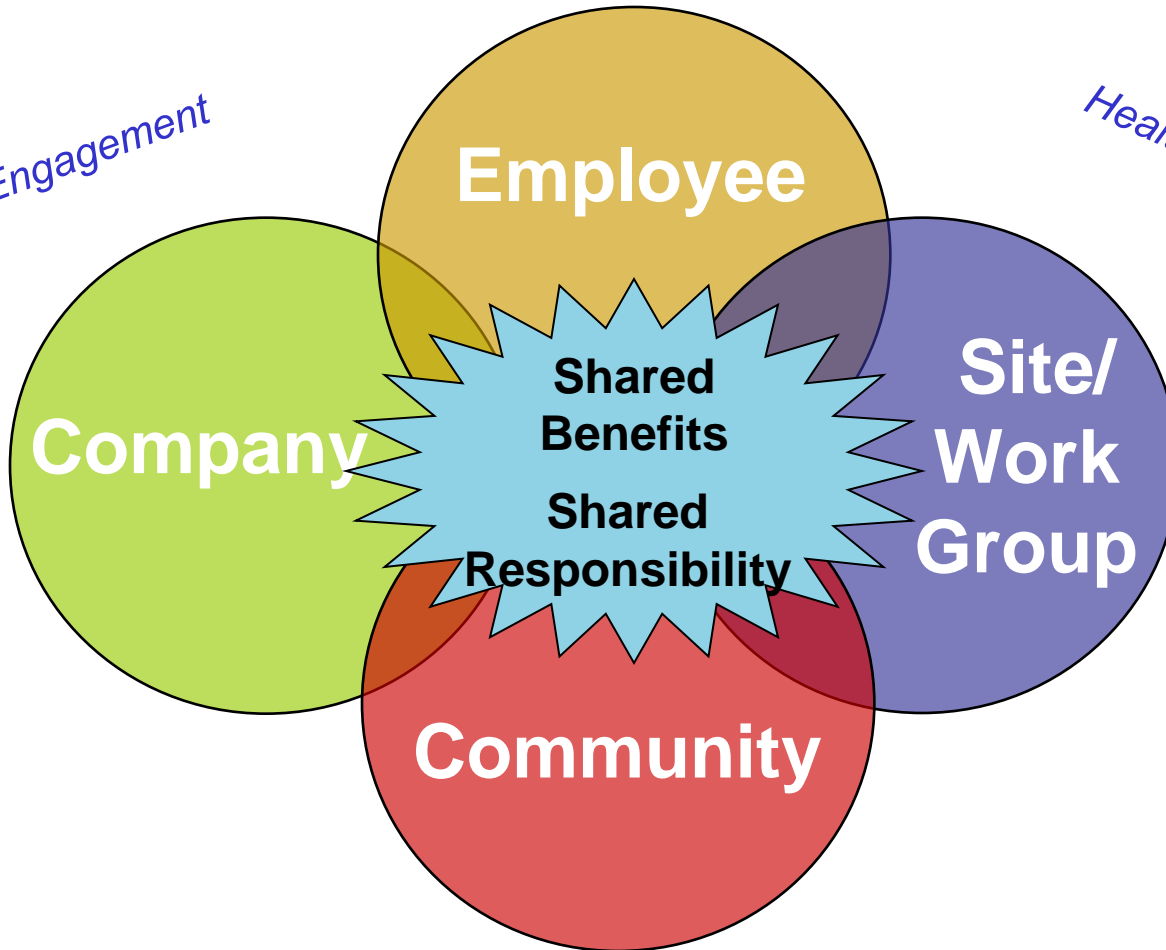


Personal behavior, engagement level

Leadership Engagement

Healthy Workplace Index

Policies,
benefits,
tools



Workplace culture,
peer support,
environment

Local norms,
environment, resources

Healthy Workplace Index



Setting the Standard for Sustainability

Healthy Workplace Index Elements

- Tobacco Policy enforcement
- **Access To Physical activity**
- **Access to Healthy Foods**
- Case Management
- **Health Assessment Participation**
- Medical Surveillance Participation
- Workplace Exposure Index
- **“Supportive Work Environment”**
- **Stress Management**



Health and Productivity



Prevention and Mgmt: Injury/Illness

- Health Conditions (1.5-2 times likely)
 - previous injury
 - existing med condition
- Lifestyle Factors (~1.5 times likely)
 - Excess stress/fatigue, smoking, sedentary, obesity)

- Health screening and consultation
- Health education and group programs
- Smoke-free workplace
- Health/risk focused campaigns
- On-site health and wellness centers
- Self-care and consumer education
- Strong benefit plan prevention coverage
- Electronic personal health record
- Positive health culture
- Community partnerships
- Healthy Workplace Index



Prevention

Dow provides the optimal array of “best practice” programs and services globally to minimize and/or reduce health risks and enhance the overall health of Dow people and company performance.

Best Practice Interventions

Preventive Care Medical Plan Coverage

100% coverage:

- Comprehensive Tobacco Cessation (\$1000/year)
- **Obesity Management (\$750/year)**
- One PAP test and one mammography per calendar year
- Routine colorectal screening at age 50 or older including,
 - Colonoscopy – 10 years
 - Flexible Sigmoidoscopy – 5 years
 - Double-contrast barium enema – 5 years
 - Fecal occult blood tests (FOBT) – 1 year
- Immunizations
- Second opinions
- Well baby examinations
- Preventive Care Allowance (\$500/year) including:
 - Routine/Preventative Office Visits
 - Dietary counseling for hypertension or hyperlipidemia
 - Vision Screening
 - Sexually transmitted infection screenings
 - Breast Cancer Genetic Risk Assessment and BRCA Mutation testing
 - Lactation consultation

Additional Coverage at 85%:

- **Diabetes education (\$400/year)**
- Breast Pump rental or purchase (\$250/pregnancy)

Health Care Costs

- Cost of Coverage (e.g., Trend versus Benchmarks)
- Global Total Cost Impact of Health

Health Status

- Global Health Risks (blood pressure, cholesterol, blood glucose, physical activity, BMI, stress/depression, dietary habits, tobacco use)
- Disease prevalence

Health-Related Productivity

- Global Presenteeism and Absenteeism Incidence and Cost

Quality of Care (US)

- Preventive Screening Participation, and adherence to vendor and provider expectations.

Culture

- Global "Healthy Culture" employee perception questions
- Healthy Workplace Index Scoring



Measured Performance

Employee Engagement

- 81% of employees participate in at least one Health Services activity each year.

Health is improving

- In 2010, there was a decrease in the high risk level for 6 out of 10 risk factors that we can trend. There was an increase in the low risk levels for 8 out of the 10 risks.
- Between 2004 and 2010 we saw a 20 percentage point (25%) reduction in high risk people and a 22 percentage point (19%) increase in low risk people in these three categories.

Employees feel positive about the company.

- The percent of Dow people who believe Dow sincerely cares about their health and well-being is strong and increasing.

Leaders are engaged in health.

- Local worksite environments are more supportive of health – as indicated by the number of sites using the Healthy Workplace Index use and score improvement by site.
- We've retained funding and leadership support for health despite challenging economics.

Study Objectives



Key Partners

- Emory University Institute for Health and Productivity Studies
- Thomson Reuters (formally known as Medstat) – Washington, DC
- University of Georgia – Athens, GA
- National Business Group on Health – Washington, DC

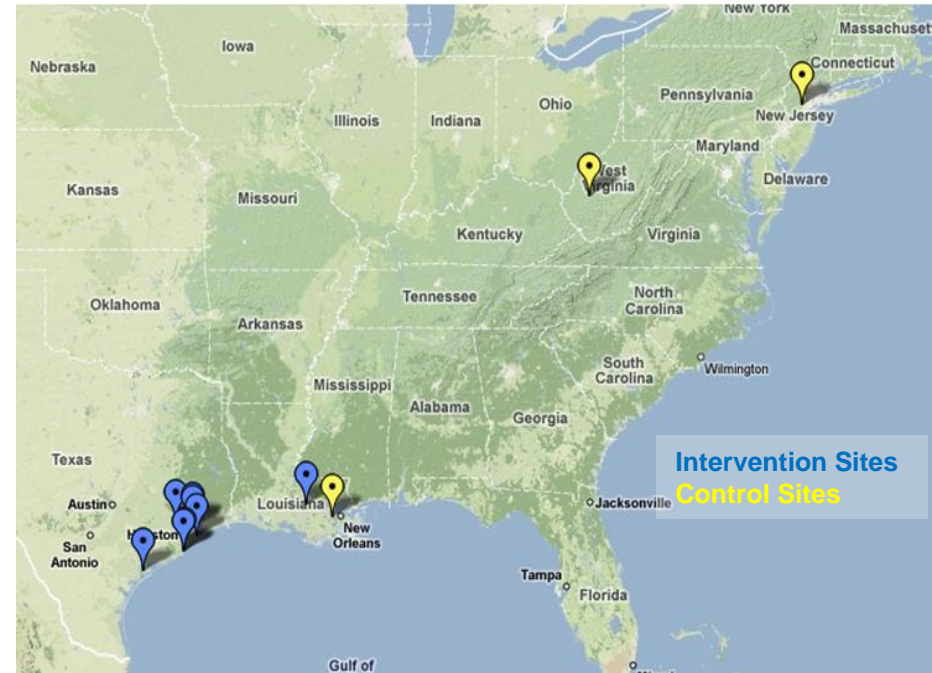
Study Objectives

- Primary: Design, implement, and evaluate innovative, evidence-based approaches to organizational / supportive **environmental interventions** aimed at reducing the prevalence of obesity and overweight among Dow employees.
- Secondary: Test the multifaceted hypothesis that, relative to individual interventions, environmental interventions:

Dow LightenUP Study Design



- Quasi-experimental – treatment vs. control/pre vs. post
- 12 Dow Chemical Company worksites received environmental/ecological interventions at varying levels of intensity
 - Intervention sites*: Texas (8) and Louisiana (1)
 - Control sites: New Jersey (1), West Virginia (1), and Louisiana (1)
- Other Dow sites in US providing benchmark/comparison data
- Year 1: Planning and formative research
- Years 2-3: Intervention program implementation directed at obesity and overweight at the worksite
- Year 4-5: Final measurement and evaluation



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Intervention Activities – All Sites



- Access to healthy food choices
 - Cafeterias, vending, catering (Dow meetings, overtime meals)
 - Education
 - Labeling
 - Promotional pricing (at High Intensity Sites only)
- Access to physical activity
 - Walking paths/routes
 - Weight management tracking program: “Why Weight (YW8) Challenge”
- Work group healthy culture focal points – local “ambassadors/champions”
 - Intervention promotion and implementation
 - Interventions advocate
 - Employee recognition
- Enhanced Communication Strategy

Intervention Activities High Intensity Sites



- All moderate intensity interventions, plus...
- Goal setting (by site leadership) and alignment with departments
 - Health screenings, weight management tracking program, leadership training
 - Increased role for healthy culture focal points
- Site leaders' increased accountability to senior management
- Site leaders' training and regular feedback sessions
- Rewards and recognition for site leaders, cross-discipline teams, healthy culture focal points and work groups

Process Evaluation Timeline



| Process Evaluation Tools | Formative | T1 <i>Intervention Year 1</i> | T2 <i>Intervention Year 2</i> | T3 <i>Post-Intervention</i> |
|-------------------------------------|------------------|------------------------------------------|------------------------------------------|----------------------------------------|
| Environmental Assessment Tool (EAT) | Apr – May 2005 | May – Jun 2006 | May – Jun 2007 | May – Jun 2008 |
| <i>Cafeteria Audit</i> | Feb 2006 | Apr, Jul, Dec 2006 | May 2007 | July – August 2008 |
| <i>Vending Assessment</i> | Apr – May 2005 | May – Jun 2006 | May – Jun 2007 | May – Jun 2008 |
| Site Contact Interviews | n/a | Jun 2006 | May – Jun 2007 | May – Jun 2008 |
| Leading By Example Survey | Apr – May 2005 | May – Jun 2006 | May 2007 | Jun 2008 |
| Cross-Discipline Team Survey | n/a | Aug 2006 | n/a | n/a |
| Healthy Culture Focal Point Survey | n/a | Nov 2006 | Oct 2007 | Jun 2008 |
| Employee Satisfaction Survey | n/a | Nov 2006 | Aug 2007 | Jul 2008 |

Health Behaviors (T1 – T3): High Risk Category



Cohort Data

| | HIGH RISK | | | |
|------------------------------------|-----------|-------|----------|----------|
| RISK FACTOR | T1 | T3 | % Change | DID |
| <i>Health Review Questions</i> | | | | |
| Intervention Sites N= 1,912 | | | | |
| Poor nutrition | 78.4% | 69.3% | -9.0%*** | -6.4%*** |
| Poor physical activity | 10.2% | 7.2% | -3.1%*** | -3.2%** |
| Tobacco use | 11.8% | 11.5% | -0.2%** | -1.2% |
| High alcohol use | 6.4% | 5.7% | -0.7%* | -0.7% |
| High stress | 2.7% | 2.0% | -0.7%* | 0.5% |
| Control Sites N= 517 | | | | |
| Poor nutrition | 74.2% | 71.6% | -2.6%*** | |
| Poor physical activity | 5.3% | 5.4% | 0.1%** | |
| Tobacco use | 7.4% | 8.3% | 0.9% | |
| High alcohol use | 2.4% | 2.3% | 0.0%* | |
| High stress | 2.0% | 0.8% | -1.2%*** | |

Statistically significant *p<0.05, **p<0.01 ***p<0.001

Biometric Values (two group comparison), T1-T3 Change



| Biometric Values | T1 | T3 | Change | DID 1 | DID 2 |
|------------------------------------|-------|-------|---------|---------|---------|
| Intervention Sites N= 1,139 | | | | | |
| Weight (lbs) | 189.3 | 189.0 | -0.3 | -1.6** | -1.6** |
| BMI (kg/m ²) | 28.3 | 28.2 | -0.1 | -0.3** | -0.3** |
| Systolic BP (mm Hg) | 124.4 | 122.3 | -2.1*** | -7.0*** | -7.0*** |
| Diastolic BP (mm Hg) | 80.3 | 78.2 | -2.1*** | -1.6** | -1.7** |
| Cholesterol (mg/dL) | 196.0 | 192.8 | -3.2*** | -3.6* | -3.6* |
| Blood glucose (mg/dL) | 94.3 | 96.2 | 1.9*** | 1.2 | 1.2 |
| Control Sites N= 382 | | | | | |
| Weight (lbs) | 187.9 | 189.2 | 1.3** | | |
| BMI (kg/m ²) | 28.0 | 28.2 | 0.2** | | |
| Systolic BP (mm Hg) | 123.2 | 128.1 | 4.9*** | | |
| Diastolic BP (mm Hg) | 79.6 | 79.1 | -0.5 | | |
| Cholesterol (mg/dL) | 193.3 | 193.7 | 0.4 | | |
| Blood glucose (mg/dL) | 95.1 | 95.8 | 0.7 | | |

DID 1: Difference-in-difference without controlling for site effects

DID 2: Difference-in-difference after controlling for site effects

Statistically significant *p<0.05, **p<0.01 ***p<0.001

Integration - the following are key

- Integration into existing vehicles (ex: site goals) and practices (workgroup).
- Proactively assertive advocacy.

Leadership Engagement - the following are key

- Specific support requests with a process to reinforce.
- Engagement of key health related partners, teams, champions.
- Support from Senior Leadership in the form of recognition and affirmation.
- Leader education/training.

Key Learnings



Employee Engagement – the following are key:

- Focus on behavioral drivers when communicating to employees.
- Focus efforts to meet existing employee interests and needs at the point of impact (plant/dept “life:” direct supervision, plant/dept focal points and peer support.
- Strong trust of Health Services organization is key – emphasis on confidentiality.
- Focus on shared responsibility.
- Ensure visibility of supportive environment interventions.
- Ensure momentum through on-going continuation of existing health efforts and strategy.

Environmental Supports

Implementation of access to healthy foods and access to physical activity recommendations can be increased through leadership support and education.

Peer Support and Work Climate

- Interventions that are implemented and visible within the workgroup can positively impact employee perception, awareness.
- Designated, workgroup focal points w/specific roles are valued and effective in communication and advocacy.
- Health supports are effective when available within plants / depts when they are employee driven and simple (Healthy Cupboards, Operator rounds, etc.).
- Employee recognition is effective in building positive climate and employee perception.
- Modeling recognition for leadership is helpful.

Community Health

Michigan Health Information Alliance



Mission

To provide accessible, affordable and effective programs, services and environmental support to improve individual resulting in optimal health for all residents.

Health Determinants

Socio-economic factors individual and communal time and energy that is available for such things as community improvement, social networking, civic engagement, personal recreation, and other activities that create social bonds between individuals and groups. It also addresses income and education.

Health Behavior factors: physical activity, substance abuse (incl. alcohol), violence, diet, tobacco use, and risky sexual behavior.

Environment & culture : "built environment", air quality and water quality. For example, poorly maintained housing, schools, workplace or recreational structures can increase the risk for injury and illness.

Health Outcomes

Changes in current or future health status of individuals or communities that can be attributed to antecedent actions or measures.

Community Health

Michigan Health Information Alliance



Deliverables

- A community needs assessment that includes both quantitative and qualitative data that assesses the needs and priorities for Midland and inevitably the CMMTA)
- Official recognition for Midland (initially) as a “Healthy Community”
- A Blueprint / strategy to obtain this recognition
- Resource Guide for Midland County

Key Community Stakeholder

- Dow Chemical Company
- Community Education Coordinator
- MidMichigan Medical Center-Midland
- Midland Community Centers
- City Clerk City of Midland
- Health Administrator
- Midland Public Schools
- Midland Department of Public Health.